

MATERIAL SAFETY DATA SHEET

Ferric Chloride

Section 01 - Chemical And Product And Company Information

Product Identifier Ferric chloride

Product Use Wastewater treatent, purifying factory effluents and deodorizing sewage, mordant in dyeing and printing textiles; pigments and inks; photoengraving.

Supplier Name..... ClearTech Industries Inc.
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Saskatoon, SK. Canada
S7L 5Z3

Prepared By..... ClearTech Industries Inc. Technical Department
Phone: (306)664-2522

Preparation Date..... March 25, 2011

24-Hour Emergency Phone..... 306-664-2522



Section 02 - Composition / Information on Ingredients

Hazardous Ingredients	Ferric Chloride	30-47%
	Hydrochloric Acid	1-5%
CAS Number	Ferric Chloride	7705-08-0
	Hydrochloric Acid	7641-01-0
Synonym (s)	Iron(III) chloride	



Section 03 - Hazard Identification

- Inhalation**..... Inhalation of spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Repeated exposure may produce respiratory tract irritation leading to frequent attacks of bronchial infection.
- Skin Contact / Absorption**..... Skin contact may produce burns. Skin inflammation is characterized by itching, scaling, reddening, or occasionally blistering.
- Eye Contact**..... Irritating to eyes; possible burns to eyes.
- Ingestion**..... Irritation of the mouth and stomach. Symptoms of severe poisoning include stomach pain, vomiting, diarrhea, dehydration, shock, pallor, weak pulse, drowsiness, dilated pupils, and coma.
- Exposure Limits**..... ACGIH/TLV-TWA: 1mg/m³ (ferric chloride)
OSHA/TWA: 1mg/m³ (ferric chloride)
ACGIH: 2ppm ceiling (hydrogen chloride gas)
OSHA: 5ppm ceiling (hydrogen chloride gas)

Section 04 - First Aid Measures

- Inhalation**..... Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention.
- Skin Contact / Absorption**..... Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persists.
- Eye Contact**..... Flush immediately with water for at least 20 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention.
- Ingestion**..... Do not induce vomiting. If vomiting occurs, lean victim forward to prevent breathing in vomit. Give large amounts of water. Do not give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention.
- Additional Information**..... Note to physician: for inhalation, consider oxygen. Avoid gastric lavage or emesis.

Section 05 - Fire Fighting

- Conditions of Flammability**..... Non-flammable



- Means of Extinction**..... Product does not burn. Where fire is involved, use any fire fighting agent(water spray, fog, foam)appropriate for surrounding material; use water spray to cool fire-exposed surfaces.
- Flash Point**..... Not applicable
- Auto-ignition Temperature**..... Not applicable
- Upper Flammable Limit** Not applicable
- Lower Flammable Limit**..... Not applicable
- Hazardous Combustible Products**... Hydrogen chloride, phosgene
- Special Fire Fighting Procedures**..... Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
- Explosion Hazards**..... Not sensitive to mechanical impact or static discharge. Ferric chloride reacts with most metals to give flammable, potentially explosive hydrogen gas. Latent fire and explosion hazard when in contact with metals due to hydrogen gas.

Section 06 - Accidental Release Measures

- Leak / Spill**..... Wear appropriate personal protective equipment. Ventilate area. Stop or reduce leak if safe to do so. Prevent material from entering sewers.
- Deactivating Materials**..... Neutralize waste with lime, limestone, or soda ash. Generation of CO₂ requires ventilation.

Section 07 - Handling and Storage

- Handling Procedures**..... Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.



Storage Requirements..... Keep container tightly closed. Do not store in metal containers. Aluminium, copper and stainless steel are readily attacked. Provide venting for rubber lined steel to avoid pressure buildup. Materials of construction to be used can include polyethylene, polypropylene, rubber-lined steel and FRP designated as appropriate for use with this product. Storage tanks should be vented to scrubber or exterior atmosphere. Storage facilities should have secondary containment as required by law or regulation. Storage tanks, piping and offloading points should be labeled with appropriate signage to avoid accidents. Some concentrations of this product will freeze or crystallize at low temperatures. Insulate and heat-trace storage tanks, pumps, pipes and ancillary equipment as necessary. Product should be used within one year.

Section 08 - Personal Protection and Exposure Controls

Protective Equipment

Eyes..... Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.

Respiratory..... Use NIOSH-approved acid gas respirator or a self-contained breathing apparatus if airborne concentrations may exceed exposure limits.

Gloves..... Impervious gloves of chemically resistant material (rubber, neoprene or PVC) should be worn at all times. Wash contaminated clothing with soap and water, dry thoroughly before reuse.

Clothing..... Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing with soap and water, dry thoroughly before reuse.

Footwear..... Impervious boots of chemically resistant material should be worn at all times.

Engineering Controls

Ventilation Requirements..... Mechanical ventilation (dilution or local exhaust), process or personnel enclosure, and control of process conditions should be provided. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other..... Emergency shower and eyewash should be in close proximity.

Section 09 - Physical and Chemical Properties

Physical State..... Liquid



Odor and Appearance	Reddish, brown liquid with a slight pungent odour.
Odor Threshold	Not available
Specific Gravity (Water=1)	1.26-1.48
Vapor Pressure (mm Hg, 20C)	40
Vapor Density (Air=1)	Not available
Evaporation Rate	Not available
Boiling Point	106°C
Freeze/Melting Point	Not available
pH	<1.0
Water/Oil Distribution Coefficient	Not available
Bulk Density	Not available
% Volatiles by Volume	Not available
Solubility in Water	Completely miscible
Molecular Formula	FeCl ₃
Molecular Weight	162.20

Section 10 - Stability and Reactivity

Stability	Stable under normal conditions. Decomposes to yield hydrochloric gas on exposure to light.
Incompatibility	Highly reactive with oxidizing, bases, acids and reducing agents. Reactive with metals and combustible materials.
Hazardous Products of Decomposition ..	Decomposes to yield hydrochloric gas on exposure to light
Polymerization	Will not occur

Section 11 - Toxicological Information

Irritancy	Irritant
Sensitization	Not available
Chronic/Acute Effects	Not available
Synergistic Materials	Not available
Animal Toxicity Data	LD ₅₀ (Oral, Rat): 895 mg/kg LD ₅₀ (Dermal, Rabbit): >2000 mg/kg
Carcinogenicity	Not considered carcinogenic by NTP, IARC, or ACGIH
Reproductive Toxicity	Not available
Teratogenicity	Not available
Mutagenicity	Tests on lab animals indicate material may produce adverse affects.

Section 12 - Ecological Information

Fish Toxicity	Ferric Chloride: LC ₅₀ (96 hr, Striped bass, 96): 6 mg/L LC ₅₀ (96 hr, Mosquitofish): 75.6 mg/L Hydrochloric acid: LC ₅₀ (96 hrs, Mosquitofish): 282 mg/L LC ₅₀ (96 hrs, Bluegill sunfish): 3.6 mg/L
Biodegradability	Not available
Environmental Effects	Not available

Section 13 - Disposal Consideration

Waste Disposal	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
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Section 14 - Transportation Information

TDG Classification

Class..... 8

Group..... III

PIN Number..... UN 2582

Other..... Secure containers (full and/or empty) with suitable hold down devices during shipment.

Section 15 - Regulatory Information

WHMIS Classification.....E

NOTE: THE PRODUCT LISTED ON THIS MSDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS MSDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

NSF Certification.....Product is certified under NSF/ANSI Standard 60 for coagulation and flocculation at a maximum dosage of 250mg/L.

Section 16 - Other Information

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / MSDS coordinator

As part of our commitment to the Canadian Association of Chemical Distributors (CACD) Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Material Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service or technical service department.



ClearTech Industries Inc. - Locations

Corporate Head Office: 2302 Hanselman Avenue, Saskatoon, SK, S7L 5Z3
Phone: 306-664-2522
Fax: 306-665-6216

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Location	Address	Postal Code	Phone Number	Fax Number
Richmond, B.C.	12431 Horseshoe Way	V7A 4X6	604-272-4000	604-272-4596
Calgary, AB.	5516E - 40 th St. S.E.	T2C 2A1	403-279-1096	403-236-0989
Edmonton, AB.	11750 - 180 th Street	T5S 1N7	780-452-6000	780-452-4600
Saskatoon, SK.	2302 Hanselman Avenue	S7L 5Z3	306-933-0177	306-933-3282
Regina, SK.	555 Henderson Drive	S42 5X2	306-721-7737	306-721-8611
Winnipeg, MB.	340 Saulteaux Crescent	R3J 3T2	204-987-9777	204-987-9770
Mississauga, ON.	7480 Bath Road	L4T 1L2	905-612-0566	905-612-0575

24 Hour Emergency Number - All Locations - 306-664-2522